

FOIA # EPA-R2-2016-003202

For further information regarding the fact sheets for Fairchild Republic Company, Farmingdale, New York, you can access information from the internet at:  
<http://www.epa.gov/region02/waste/fs.fairch.htm>.



## Region 2

<http://www3.epa.gov/region02/waste/fsfairch.htm>

Last updated on Tuesday, February 23, 2016

You are here: [EPA Home](#) > [Region 2 Waste](#) > [NY RCRA Cleanup Fact Sheet](#) > Fairchild Republic Company

### Fairchild Republic Company

<b>EPA Identification Number:</b>	NYD079818555
<b>Facility Location:</b>	1000 Conklin Street, Farmingdale, New York 11735
<b>Facility Contact Name:</b>	Michael Hodge, (703) 478-5858
<b>EPA Contact Name:</b>	Samuel Ezekwo, (212) 637-4168, <a href="mailto:ezekwo.sam@epa.gov">ezekwo.sam@epa.gov</a>
<b>New York State Department of Environmental Conservation (NYSDEC) Case Manager:</b>	Steve Scharf, (518) 402-9620 <a href="mailto:sxscharf@gw.dec.state.ny.us">sxscharf@gw.dec.state.ny.us</a>
<b>Last Updated:</b>	February 2006
<b>Environmental Indicator Status</b>	<a href="#">Human Exposures Under Control</a> [PDF 163.2 KB, 14 pp] has been verified. <a href="#">Groundwater Contamination Under Control</a> [PDF 38.59 MB, 1 pp] has been verified.

### Site Description

The Fairchild Republic Company facility is located in East Farmingdale, Long Island, New York. This facility manufactured aircraft and related parts from 1931-1987. All process units were clean closed in 1988.

The facility includes two New York State Department of Environmental Conservation (NYSDEC) listed sites: the main plant site and the old recharge basin.

The main plant site is bounded by Route 110 (Broad Hollow Road) to the west; the Long Island Railroad (LIRR) to the north; New Highway to the east, and Republic Airport to the south.

The old recharge basin is located on the opposite side of Route 110, south of Conklin Street. The old recharge basin was used by Fairchild to discharge process waste waters and storm water. All of the former site buildings have been razed and the clean materials and site soils were used to fill in the old recharge basin.

A shopping mall is now located on the former main plant site area. The nearest down-gradient residences are about a mile away, and the closest down-gradient public water supply well field is about 1.5 miles southeast.

### Site Responsibility and Legal Instrument

Order on Consent (#W1-0461-90) signed in March 1992 between NYSDEC and Fairchild

# New York State Department of Environmental Conservation

## Division of Environmental Remediation

Bureau of Eastern Remedial Action, Room 242

50 Wolf Road, Albany, New York 12233-7010

Phone: (518) 457-4349 FAX: (518) 457-4198



John P. Cahill  
Commissioner

August 27, 1999

**COPY**

Michael McEachern  
MAC Consultants, Inc.  
515 Route 111  
Hauppauge, New York 11788

RE: Fairchild Republic Main Plant Site, East Farmingdale,  
Suffolk County Site No. 1-52-130

Dear Mr. McEachern:

This is a follow up to our August 27, 1999 telephone conversation regarding the Mairroll Fairchild Republic Main Plant Site (MPS) Remedial Design (RD) Work Plan. The revised MPS RD Work Plan has been reviewed by the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of Health (NYSDOH) and the Suffolk County Department of Health Services (SCDHS). By means of incorporating the changes discussed on our August 27, 1999 telephone conversation, the MPS RD work plan, pursuant to Article I Sections A and B of the MPS order on consent, is hereby approved.

As per our discussions, the first three tasks, including the conceptual model, the numerical modeling and the sampling and analyzing of existing monitoring wells is or is nearly complete. The conceptual model will be submitted for review within the next two weeks and the numerical model shortly thereafter.

Pursuant to paragraph I, subparagraph A and paragraph XIII, subparagraph I of the MPS RD/RA order on consent, the remedial design work plan must either be signed, sealed and submitted by an individual professional engineer or from/in conjunction with an engineering firm licensed to practice engineering in accordance with Article 145 of the New York State Education law.

If you have any questions, please contact me at (518)457-3395.

Sincerely,

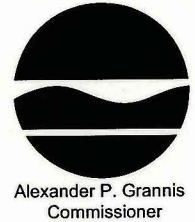
**COPY**

Steven M. Scharf, P.E.  
Project Engineer  
Bureau of Eastern Remedial Action  
Division of Environmental Remediation

c: M. Hodge, Mairroll/Fairchild  
S. Haskins, NYSDOH  
S. Robbins, SCDHS

Mike P.

**New York State Department of Environmental Conservation**  
**Division of Environmental Remediation**  
Remedial Bureau A  
625 Broadway, 11<sup>th</sup> Floor  
Albany, New York 12233-7015  
Phone: (518) 402-9620 • Fax: (518) 402-9022  
Website: [www.dec.state.ny.us](http://www.dec.state.ny.us)



April 1, 2008

Dan St. Germain, CPG.  
Malcolm Pirnie Inc.  
17-17 Fairlawn Ave  
Fairlawn, NJ 07410

RE: Fairchild Republic Main Plant Site, East  
Farmingdale, NYSDEC Site No.1-52-130.

Dear Mr. St. Germain:

Malcom Pirnie Inc., on behalf of the Mairoll Corporation, has agreed to the remedial plan entitled "Mitigation of Sub-Slab Vapor Beneath Portions of the Airport Plaza, February 2008." This retail plaza has two separate buildings, which are located on property that was the former Fairchild Republic Main Plant Site. By means of this letter, the New York State Department of Environmental Conservation (NYSDEC) approves, with concurrence from the New York State Department of Health (NYSDOH) the Airport Plaza mitigation that includes mitigation, at a minimum of the commercial facilities listed below.

The Malcolm Pirnie sub-slab mitigation plan, is detailed in figure 8 of the October 2007 report entitled "Indoor Air and Soil Vapor Sampling, Airport Plaza, East Farmingdale, New York." The original source areas for trichlorethene (TCE) and perchlorethene (PCE) were remediated with a soil vapor extraction (SVE) system. Discrete sampling of the soils indicated the sources have been remediated, but residual vapors, identified by previous testing by Malcolm Pirnie, have created the need for vapor intrusion mitigation.

Sub-slab depressurization systems (SSDS), as specified, vacuum-tested and appropriately designed, will be implemented to effectively address the potential for vapor intrusion at the following locations:

Staples Superstore, Stew Leonard's Wine and Liquors, Radio Shack, Rockaway Bedding, Marty's Shoes, Prime Time School, Bellagios, Sleepy Kids, Hallmark Creations, China Grand Buffet, Joyce Leslie and Borders Books and Café.

Once installation is complete, the operation and maintenance will be the responsibility of the potential responsible party or the building owner. Given the number of locations to be mitigated and the number locations proposed for monitoring, it would be prudent to initially monitor all the locations of the Airport Plaza annually that are not being mitigated until such time as sampling indicates monitoring is no longer required. Annual reports should be submitted to this office at the above address.



Malcolm Pirnie should give the NYSDEC five (5) business day's advance notice prior installing the depressurization systems. In the meantime, if you have any questions, please contact me directly at (518)402-9620.

Sincerely,

*Steven M. Scharf*

Steven M. Scharf, P.E.  
Project Engineer  
Remedial Bureau A  
Division of Environmental Remediation

ecc: J. Swartwout/S. Scharf/File  
W. Parish, Region 1 (Via E-mail)  
J. Nealon, NYSDOH (Via E-mail)  
G. Rosser, SCDHS (Via E-mail)  
S. Hall, Esq., Mairoll (via E-mail)

# New York State Department of Environmental Conservation

## Division of Environmental Remediation

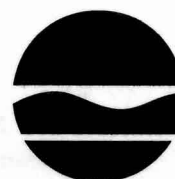
Remedial Bureau A

625 Broadway, 11<sup>th</sup> Floor

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Alexander P. Grannis  
Commissioner

April 1, 2008

Dan St. Germain, CPG.  
Malcolm Pirnie Inc.  
17-17 Fairlawn Ave  
Fairlawn, NJ 07410

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Sincerely,

*Steven M. Scharf*

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S. Hall, Esq., Mairoll (via E-mail)

# RECORD OF DECISION

## FAIRCHILD REPUBLIC

### MAIN PLANT SITE

East Farmingdale, Suffolk County, New York

Site No. 1-52-130

March 1998

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#### SECTION 1: SITE LOCATION AND DESCRIPTION

The Fairchild Republic Main Plant Site (see Figure 1) is comprised of 4.5 acres of a former facility of approximately 88 acres in East Farmingdale, Suffolk County, New York. The Main Plant Site is bounded by Route 110 (Broad Hollow Road) to the west; the Long Island Railroad (LIRR) to the north; New Highway to the east; and Republic Airport to the south. There are 4.5 acres in the southeast portion of the Fairchild property that represents the current boundary of the Fairchild Republic Main Plant Site (NYSDEC Inactive Hazardous Waste Disposal Site No. 1-52-130).

#### SECTION 2: SITE HISTORY

##### 2.1: Operational/Disposal History

Fairchild Republic manufactured aircraft and related parts from 1931 to 1987. The total Fairchild Main Plant property in East Farmingdale (88 acres) consists of two parcels (see Figure 1). Parcel one is located south of Conklin Street and contains the 4.5 acre NYSDEC listed site. This parcel was first used as a runway in 1927. Seversky Aircraft operated at the site from 1931 to 1939. Republic Aviation Corporation purchased Seversky Aircraft in 1939. Numerous manufacturing buildings were built or expanded in the 1940's. Fairchild Industries, Inc. took possession of the property in 1965 when it acquired assets of Republic Aviation Corporation.

Parcel two (approximately 13 acres) is north of Conklin Street and Buildings 53, 54, and 55 were located here. The Ranger Aircraft Engine Corporation purchased the property in 1927 and constructed manufacturing and test facilities for aircraft engines. Republic Aviation Corporation purchased the property in 1955 and used the existing facilities for research and development and office space. The Farmingdale Company owned the property from 1965 to 1972. Fairchild Industries purchased the property in 1972 and used it as warehouse and office space until closing in 1987. Parcel two has been removed from the original listing of the Main Plant Inactive Hazardous Waste Disposal Site.



The Fairchild Republic Main Plant closure plan was submitted to the NYSDEC in 1987 under the Resource Conservation and Recovery Act (RCRA) requirements. The approved plan was implemented from 1987 through 1988. The site closure included the removal of hazardous materials, residues, and all above and underground storage tanks, except four 15,000 gallon fuel oil tanks, which were removed in 1992.

Fairchild Republic Main Plant manufacturing operations did not change significantly from the mid-1940s to 1987. Building 17 was the primary manufacturing area with processes including chemical milling, alodining, anodizing, vapor degreasing, titanium descaling, and cadmium plating. Process chemicals used in this area included nitric acid, chromic acid, sulfuric acid, sodium hydroxide, toluene, tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), and nitric/hydrofluoric acid solutions. PCE, TCE, and 1,1,1-TCA were also used in other areas of the Main Plant.

PCE was substituted for toluene as a coatings vehicle to conform with air pollution regulations beginning in 1975. Years later, the piping from the PCE tank was found to be leaking, creating a source of PCE soil and groundwater contamination. The TCE soil and groundwater contamination came from the vapor degreaser operations, from TCE that occurs in non-reagent grade PCE, and as a breakdown product of PCE.

The Main Plant industrial water supply was always obtained from groundwater wells. The average pumping rate listed in the RI Report was estimated at 1.7 million gallons per day. Non-contact industrial and air conditioning cooling water, treated wastewater, and stormwater were discharged through the storm sewer to the Old Recharge Basin located west of the site beginning in the early 1940s (See Figure 1.)

The Old Recharge Basin historically introduced low level volatile organic compound (VOC) contamination to the groundwater beneath Republic Airport. This low level groundwater plume has commingled with higher concentration contamination from an unknown upgradient VOC source. The Remedial Investigation for the Old Recharge Basin (ORB) has shown that the ORB is no longer a source of groundwater contamination. A Record of Decision was signed for the ORB in June 1996.

Fairchild Republic constructed a wastewater treatment plant at the Main Plant Site (MPS) in 1950 to reduce hexavalent chromium to trivalent chromium and to precipitate metal hydroxides in wastewater from the chemical milling, alodine process, anodizing, spotweld wash, and paint shop operations. The plant was located adjacent to the south wall of Building 17. Wastewater was treated in batches from 1950 to 1963. The treatment plant was upgraded in 1963 to handle continuous waste streams and again in 1986 to meet publicly owned treatment works pretreatment standards. The MPS treatment plant effluent was diverted to the NYSDOT sewage treatment plant located on the Republic Airport property in 1981. In 1986, the MPS treatment plant was

connected to the Suffolk County Publicly Owned Treatment Works. Shortly thereafter in 1987 Fairchild Republic ceased manufacturing operations at the Main Plant.

Fairchild connected homes with private wells to public water that were identified within an area between Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway. Fairchild agreed to do this work, but by doing so, Fairchild was not confirming that the contamination in these wells was from Fairchild nor were these connections made in response to any water quality problems necessarily attributable to Fairchild. Any private wells identified in this area of concern that are being used as a source of drinking water will be offered the opportunity to connect, at no cost to the homeowner, to the Suffolk County Water Authority (SCWA) public water supply by the Record of Decision.

Two abandoned 550 gallon underground storage tanks were discovered and removed during the excavation of site soils in February 1998. Both underground storage tanks were found within the boundaries of the inactive hazardous waste site. One of the recently discovered tanks was next to the vapor degreaser. Based on the analytical results from sludge samples, the leaking tank was used to store trichloroethene. The tank location was within the zone of influence of the soil vapor extraction system described in Section 3.2. The second 550 gallon tank also contained a sludge material. The analysis showed the contents to be waste paint.

## **2.2: Remedial History**

- 1987-8: Phase 2 Hydrogeological Investigation and Report by Geraghty and Miller, Inc.
- 1988: MPS Resource Conservation and Recovery Act work plan and closure by Eder Associates; including removal of 95 above and below ground tanks, hazardous materials and residues.
- 1989: The MPS listed as a Class 2 inactive hazardous waste disposal site due to past disposal practices.
- 1990: Supplemental Phase 2 Report, Geraghty and Miller, Inc.
- 1991: Fairchild/Grumman Wind Tunnel Investigation and catch basin removal.
- 1992: Summary of Environmental Investigations Report, Geraghty and Miller, Inc.
- 1992: MPS RI/FS Consent Order signed.
- 1992: Initiate Remedial Investigation fieldwork.
- 1992: Building 42 soil resampled.
- 1993: 13 fuel oil tanks removed.
- 1994: Petition for and acceptance of reduction of MPS Site boundary.
- 1994: Building 18, 18A, 20, 25, 27, 29, 30, 30A, 38, 39, 42, 43, 44, 45, 46, 63 and 64 demolition.
- 1995-6: Design and installation of Building 17 Soil Vapor Extraction IRM.
- 1996-7: Connection of downgradient private wells within a specified area to municipal water supply.
- 1996-7: Area 5 Inactive Hazardous Waste Area Soil Sampling.

1996-7: Building 17, 19, 19A, 32, 33, 53 and 55 demolition.

1997: Final Main Plant Site Remedial Investigation/Feasibility Study (RI/FS) Reports.

### SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and/or the environment, Fairchild Republic has recently completed the Remedial Investigation/Feasibility Study (RI/FS) for the Main Plant Site. The RI/FS documents can be found in the document repositories listed in Section 8.

#### 3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted in 2 phases. The first phase was conducted between August 1992 and January 1993 and the second phase between September 1993 and February 1994. A report entitled Fairchild Industries, Inc. Main Plant Site Remedial Investigation Report, May 1997 describes the field activities and findings of the RI in detail. Data from previous investigations and additional sampling efforts in 1996 and 1997 for Old Recharge Basin fill materials were also compiled in the Main Plant Site RI Report. The RI included the following activities:

- *Installation of monitoring wells and soil borings.*
- *Chemical analysis of soil and groundwater samples.*
- *Soil gas surveys for volatile organic compounds.*
- *Groundwater hydrogeologic conditions and physical properties of site soils.*
- *Compiling all previous data generated by the Site closure and investigations.*
- *Additional site sampling for soils to be used in filling the Old Recharge Basin.*

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water, and surface water SCGs identified for the Main Plant Site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and 10 NYCRR Part 5 of NYS Sanitary Code. NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 Soil Cleanup Guidelines for the Protection of Groundwater, background conditions, and risk-based remediation criteria were used as SCGs for soils.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

Chemical concentrations are reported in parts per billion (ppb), parts per million (ppm), and parts per billion by volume (ppbv) for air samples. For comparison purposes, SCGs are given for each medium. (See Table 1.)

### **3.1.1: Nature of Contamination**

As described in the RI Report, many soil, groundwater and soil gas samples were collected at the Site to characterize the nature and extent of contamination. These samples were analyzed for volatile and semi-volatile organic compounds, pesticides, polychlorinated biphenyls (PCBs) and inorganics (metals). Overall, chlorinated volatile organic compounds (VOCs), mainly trichloroethylene (TCE) and perchloroethylene (PCE) are the contaminants of concern for this site. Discrete areas of site soils also contained chromium above NYSDEC TAGM 4046 guidelines but below hazardous levels of concern as substantiated by the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP test is used to define a hazardous waste for disposal purposes.

### **3.1.2: Extent of Contamination**

Table 1 summarizes the extent of contamination for the contaminants of concern in the soils and groundwater and compares the data with the proposed remedial action levels (SCGs) for the Site. Some chemical concentrations no longer exist due to previously implemented interim remedial measures (IRMs). See Section 3.2. The following are the media which were investigated and a summary of the findings of the investigation:

#### **Soil**

The most significant manufacturing and process areas were located in Building 17 (see Figure 1). The alodine and chemical milling tanks, vapor degreaser, and PCE and TCA tanks were located along the southern wall. It is this area that comprises most of the currently listed 4.5 acre site. The soils beneath the slab and adjacent to Building 17 were found to be contaminated with VOCs; mainly TCE and PCE. The alodine and chemical milling areas under Building 17 and sulfuric anodizing area under Building 42 also contain levels of chromium above NYSDEC TAGM 4046 soil values.

The highest soil gas concentrations were found near the former PCE tank and near the vapor degreaser area beneath Building 17. These concentrations ranged from non-detect (ND) to 1,300 ppmv for TCE, ND to 23,000 ppmv for PCE, ND to 690 ppmv for dichloroethylene (DCE, cis & trans), ND to 61 ppmv for trichloroethane (TCA) and ND to 0.016 ppmv for vinyl chloride. There are no standards or guidance values for soil gas concentrations.



reviewed for inorganic SCG exceedences; including chromium. The groundwater analytical results indicate that the MPS is not a source of inorganic contamination to groundwater.

Historic low level VOC groundwater contamination slightly above SCGs from the ORB can also be found on the southwestern side of Republic Airport. The majority of this plume is TCE and has commingled with the plume of a much higher level of TCE from an unidentified upgradient source. It has been more than 15 years since Fairchild discharged into the recharge basin. More recent MPS RI data shows the ORB is no longer a source of VOC groundwater contamination.

Groundwater concentrations exceeded the standard for TCE in 68 of the 160 samples taken. The maximum RI TCE concentration was 1,659 ppb. For PCE the standard was exceeded in 39 of 160 samples taken. The maximum RI PCE concentration was 5,100 ppb. For vinyl chloride, the standard was exceeded in 26 of 160 samples. The maximum RI vinyl chloride concentration was 200 ppb. These groundwater concentrations were found downgradient of the MPS and represent a significant exceedence of SCGs in the glacial and Magothy aquifers. The NYS groundwater standard is 5 ppb for TCE, PCE and DCE and 2 ppb for vinyl chloride. (See Table 1.)

### 3.2: Interim Remedial Measures

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. Fairchild Republic has elected to implement two IRMs at the Main Plant Site. The first IRM consisted of two soil vapor extraction (SVE) systems in Building 17 of the MPS Site. The second IRM removed the chromium contaminated soils from the surface of the Main Plant Site.

One SVE system addressed the TCE associated with the vapor degreaser located in the southwest corner of Building 17. The second SVE system addressed the PCE associated with the PCE tank located adjacent to the southeast portion of Building 17. The SVE systems operated beneath the slab of Building 17 for more than one year. The SVE effluent prior to treatment approached non-detect after a period of turning on and turning off (pulsing) the system. Test results of the soils were compared to NYSDEC TAGM 4046 guidance values. These results demonstrated that VOCs were effectively removed from the soils beneath Building 17. Both SVE systems were decommissioned in March 1997.

The second IRM consisted of excavating and removing chromium contaminated soils from the Site. These soils were placed in the Old Recharge Basin with the restriction that they must be placed a minimum of 10 feet below ground surface and 5 feet above the water table. None of the chromium analytical results for these soils exceeded chromium concentrations that currently exist in the Old Recharge Basin. The completed soil vapor extraction system, the chromium soil IRM, and the RCRA closure have removed all source areas from the MPS soils.

Comparative soil sample results ranged from ND to 4.4 ppm for TCE, ND to 4 ppm for PCE, ND to 0.14 ppm for DCE, ND to 0.013 ppm for TCA and 2.6 to 791 ppm for chromium. Most detectable results for soils were below NYSDEC TAGM 4046 soil cleanup values of 0.7 ppm for TCE, 1.4 ppm for PCE, 0.4 ppm for DCE, 0.8 ppm for TCA and 50 ppm for chromium. The chromium contaminated soils did not fail TCLP and were excavated and removed from the Site.

### Groundwater

The direction of groundwater for both the shallow and deep zone is illustrated in Figure 2. The RI determined that Building 17 is a significant source area for VOC groundwater contamination. There is an extensive PCE plume that is well defined emanating from the area of the former PCE tank. This plume is moving south-southeast beneath the runways of Republic Airport as shown on Figure 3. In the area of the MPS Site, the glacial aquifer flow in the horizontal direction is about 1.5 feet/day.

No information exists on the duration of TCE use or discharges at the MPS. The vapor degreaser is a source of contamination of TCE (see Figure 4). However, the TCE plume is not as well defined as the PCE plume for the following reasons: (1) the former high volume MPS groundwater production wells and the new recharge basins on the MPS Site (see Figure 2) may have affected the offsite migration of the plume, especially in the glacial aquifer; and (2) off-site sources of TCE, including the Old Recharge Basin (ORB), may have impacted the western portion of the groundwater plume beneath Republic Airport. Furthermore, the downgradient extent of the MPS VOC plume has never been fully established. However, it does extend south of Republic Airport.

Under Building 17, there is no clay layer separating the glacial and Magothy aquifers. However, there is an unnamed clay layer separating the upper Magothy from the lower Magothy. Elevated levels of PCE have migrated downward through the glacial aquifer toward the top of a clay layer confining unit separating the upper and lower portions of the Magothy aquifer. The RI soil borings indicate this clay layer is continuous throughout the area of concern as shown on Figure 5. Deep aquifer testing below this clay formation found no VOCs and indicated that this clay layer has restricted downward migration and enhanced lateral migration of contaminated groundwater flow. }

A limited sampling of MPS groundwater wells was conducted in February 1997. The data revealed that the shallow and deep VOC groundwater contamination beneath the Main Plant Site had dropped significantly and moved downgradient. For example MW-19D, located just downgradient of the Building 17 source areas, decreased from 3,600 ppb PCE to 142 ppb of PCE.

Some benzene, toluene, ethylbenzene and xylene (BTEX) was found in upgradient MW-3 from an offsite spill that has since been remediated. The February 1997 sampling round that included MW-3, found BTEX reductions to just above SCGs. The groundwater analytical data was also

### 3.3: Summary of Human Exposure Pathways

This section discusses the potential pathways of exposure for people living near the Fairchild Republic Site. An exposure pathway is how an individual may come in contact with a contaminant. The elements of an exposure pathway include; the source of contamination; the contaminated environmental media (i.e. soil, water and air) and the way the contaminant migrates from the source; the location where one may be exposed to the contamination; how the contaminant enters the body (i.e. inhalation, ingestion, and/or adsorption through the skin); and, the population exposed to the contamination.

The potential exposure pathway of concern at the MPS is ingestion of contaminated groundwater. During the RI, volatile organic compounds were detected in on-site and off-site groundwater monitoring wells at concentrations significantly above drinking water standards. There are three public drinking water supply wellfields located downgradient from the MPS. These include: the East Farmingdale Water District Route 109 Wellfield, and the Suffolk County Water Authority Albany Avenue and Tenety Avenue Wellfields. Two additional Suffolk County Water Authority Wellfields, North Fifth Street and Lambert Avenue are much further downgradient and should not be effected by the MPS plume. Public supply well locations are shown on Figure 6.

VOCs were detected in the shallow wells at the Albany Avenue Wellfield in 1977. The contaminated wells were taken out of service in early 1977 and remain off-line. Organic chemical contamination has never been detected in the three deep wells at Albany Avenue, or at the other downgradient wellfields.

At the request of the NYSDOH, a private well survey was conducted downgradient of the MPS between Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway. Several private wells were identified during the survey, some of which were used as a drinking water source. The residents with homes supplied only by private drinking water wells identified during the survey were advised as appropriate on measures to reduce possible exposure to contaminants that may be in their drinking water. Many of these homes have since been connected to public water. In the future, all homes serviced by private drinking water wells located in and around Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway will be connected to public water, if permitted by the homeowner, at no cost to the homeowner. Currently, exposure to site-related chemicals in the public water supply is unlikely since routine monitoring of the public drinking water supply wells has not detected contamination.

In order to evaluate the health risks associated with exposure to contaminated drinking water, Fairchild Republic prepared a Risk Assessment using a groundwater model to predict what the concentration of VOCs would be if contaminants migrated to downgradient public drinking water supply wells. Groundwater models, such as the one used by Fairchild, which attempt to predict contaminant levels after microbial decomposition and transport through a heterogenous media (soil), can be highly speculative and may significantly underestimate the health risks associated

with exposure to contaminated drinking water. Therefore, NYSDOH requested that Fairchild recalculate the health risks associated with exposure to contaminated drinking water using the actual VOC levels detected in groundwater during the RI. However, in order to proceed with the RI/FS process, the NYSDOH and NYSDEC allowed Fairchild to forego recalculation of the Risk Assessment as requested, provided that Fairchild agree to a remedial action objective for the groundwater contamination that will be protective of human health and the environment.

### 3.4: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures which may be presented by the Site. No impacts from the Main Plant Site to fish and wildlife resources were found.

No potential environmental exposure to natural habitats were found to exist based on the MPS data and no future impacts to surface water or fish and wildlife resources are expected. No wetlands or surface water bodies have been identified on or within a one-half mile downgradient radius of the Site. Surrounding land use is light industrial in all directions with the closest residential area over one-half mile to the west.

## SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Potentially Responsible Party (PRP) for this Site is Mairoll, Inc., which is a subsidiary of the Fairchild Holding Corporation. Fairchild implemented the RI/FS at the Site, as requested by the NYSDEC. After the remedy is selected, Fairchild will be requested to implement the remedial program. If an agreement cannot be reached with Fairchild, the NYSDEC will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs incurred by the State.

The following is the chronological enforcement history of this site:

<u>Plans</u>	
1987-8 RCRA Closure Plan	
<u>Orders on Consent</u>	
<u>Date</u>	<u>Index No.</u>
03/20/92	No. W1-0461-90-02-MPS RI/FS Order
12/25/96	No. W1-0705-94-08-ORB Fill Order



**Fairchild Republic  
Main Plant  
East Farmingdale, Suffolk County, New York  
Site No. 1-52-130**

Update in March 1998

**EPA Facility ID#: NYD00**

**Fairchild Republic Main Plant Contact:**

**EPA Project Manager: Jean Robert Jean, (212) 637-4136**

**NYSDEC Case Manager:**

→ **Site Facts:** The 88 acres Fairchild Main Plant consists of two parcels. Parcel one, which contains Building 17, is approximately 4.5 acre. It was first used as a runway in 1927. The Ranger Aircraft Engine Corporation purchased the property in 1927 and constructed manufacturing and test facilities for aircraft engines. Seversky Aircraft operated at the site from 1931 to 1939. Republic Aviation Corporation purchased Seversky Aircraft in 1939. Republic Aviation Corporation purchased the property in 1955 and used the existing facilities for research and development and office space. Fairchild Industries, Inc. took possession of the property in 1965 when it acquired assets of Republic Aviation Corporation. The Farmingdale Company owned the property from 1965 to 1972. Fairchild Industries purchased the property in 1972 and used it as warehouse and office space until closing in 1987. Fairchild Republic ceased manufacturing operations at the Main Plant in 1987.

Building 17 was the primary manufacturing area with processes including chemical milling, alodining, anodizing, vapor degreasing, titanium descaling, and cadmium plating. Process chemicals used in this area included nitric acid, chromic acid, sulfuric acid, sodium hydroxide, toluene, tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1,1trichloroethane (1, 1, 1-TCA), and nitric/hydrofluoric acid solutions. PCE, TCE, and 1, 1, 1-TCA were also used in other areas of the Main-Plant. Parcel two (2), which is approximately 13 acres, has been removed from the original listing of the Main Plant Inactive Hazardous Waste Disposal Site.

~~PCE was substituted for toluene as a coating for vehicle to conform with air pollution regulations beginning in 1975. Years later, the piping from the PCE tank was found to be leaking, creating a source of PCE soil and groundwater contamination. The TCE soil and groundwater contamination came from the vapor degreaser operations, from TCE that occurs in non-reagent grade PCE, and as a breakdown product of PCE.~~

Noncontact industrial and air conditioning cooling water, treated wastewater, and stormwater were discharged through the storm sewer to an Old Recharge Basin. The Old Recharge Basin historically introduced low level volatile organic compound (VOC) contamination to the groundwater beneath Republic Airport. This low level groundwater plume has commingled with higher concentration contamination from an unknown upgradient VOC source.

Two abandoned 550 gallon underground storage tanks were discovered and removed during the excavation soils in February 1998. Both underground storage tanks were used to store trichloroethene, sludge material, waste paint.

*as a result of discharged from*  
*Noncontact air conditioning*  
*by discharge*  
*from*



Steven Scharf  
<sxscharf@gw.dec.state.ny.us>

05/14/02 09:01 AM

To: Rachel Chaput/R2/USEPA/US@EPA  
cc:  
Subject: Re: fairchild again

Rachel,

There are some inaccuracies in your fact sheet.

1. The ORB is a separate listed site on the NYS registry of inactive hazardous waste disposal sites.
2. The East Farmingdale Water District has never had contamination in their Route 109 Well field located approximately 6,500 feet south of the Former MPS site.
3. The Albany Avenue Well field has been and is still up and running. The Suffolk County Water Authority (SCWA) operates this well field and they only shut down their Glacial well and I believe this was around 1975 or so.;
4. The nearest downgradient residences are 1.5 miles away and the E Farmingdale wellfield is slightly more than 1 mile downgradient. Their wells are screened at about 725 feet and have always been below any contaminated segment of the aquifer.
5. There are PCB issues associated with the ORB that we are working on now.

Steven M. Scharf, P.E.  
Project Engineer  
New York State Department of  
Environmental Conservation  
Division of Environmental Remediation  
Bureau of Eastern Remedial Action  
625 Broadway  
Albany, NY 12233-7015  
(518) 402-9620  
Fax: (518) 402-9022

>>> <Chaput.Rachel@epamail.epa.gov> 05/10/02 02:40PM >>>  
Hi Lynn, Steve -

i know how much you enjoy hearing from me, so i wanted to send you another message before the weekend. :)

thank you for the map, i got it yesterday. there is some i do not understand about it, since there is no key to it (like what is SW, PW, etc). i think the little dots are residences, or at least i hope so. this is a big help.

anyway, attached is my revised Fairchild fact sheet. i revised this considerably from what we had before, to reflect the info from the EI writeup we have, and the map you sent. however, there are gaps. i don't fully understand the situation with indoor air (see below), and i have fudged the info on the nearby residences bc i'm not sure.

what we do not understand re: indoor air is, has any sampling been done in structures on site, like in the mall? i understand that the contamination off site is deep and so it is thought the indoor air would not be a problem, but that is an assumption that EPA is not comfortable



DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA725)

9/24/01

Current Human Exposures Under Control

Facility Name: Fairchild Republic Co.  
Facility Address: East Farmingdale, NY 11735  
Facility EPA ID #: NYD079818555

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination? (Note: This determination addresses contaminated media regulated under New York State's Inactive Hazardous Waste Disposal Site Remedial Program.)

- ☒ If yes - check here and continue with #2 below.  
☐ If no - re-evaluate existing data, or  
☐ if data are not available skip to #6 and check the "IN" status code.

**BACKGROUND**

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved) to track changes in the quality of the environment. The two EI developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

**Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

**Current Human Exposures Under Control**  
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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**<sup>1</sup> above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u>x</u>	—	—	(see below)
Air (indoors) <sup>2</sup>	—	<u>x</u>	—	
Surface Soil (e.g., <2 ft)	—	<u>x</u>	—	
Surface Water	—	<u>x</u>	—	
Sediment	—	<u>x</u>	—	
Subsurf. Soil (e.g., >2 ft)	<u>x</u>	—	—	(see below)
Air (outdoors)	—	<u>x</u>	—	

— If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

— If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

**Background**

The Fairchild Republic Main Plant Site is part of a former facility of approximately 88 acres in East Farmingdale, Suffolk County, New York (Fig. 1). The Main Plant Site is located on the east side of Route 110 and is bounded by the Long Island Railroad (LIRR) to the north; New Highway to the east; and Republic Airport to the south. There are 0.53 acres in the southeast portion of the Fairchild property that represents the current boundary of the Fairchild Republic Main Plant Inactive Hazardous Waste Disposal Site.

*? other companies go?*  
 Fairchild manufactured aircraft and related parts from 1931 to 1987. The Fairchild facility property in East Farmingdale consists of

<sup>1</sup> "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

<sup>2</sup> Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.



Fairchild 31-87  
owned top part above  
Conklin the whole time

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all  
aviation  
companies  
below Conklin  
has been owned  
by Seversky, d.  
Republic  
1900-1987  
72-87  
definite

two parcels. One parcel is located south of Conklin Street and contains the 0.53 acre NYSDEC listed site. This parcel was first used as a runway in 1927. Seversky Aircraft operated at the site from 1931 to 1939. Republic Aviation Corporation purchased Seversky Aircraft in 1939. Numerous manufacturing buildings were built or expanded in the 1940's. Fairchild Industries, Inc. took possession of the property in 1965 when it acquired assets of Republic Aviation Corporation. The remainder of the facility is north of Conklin Street. The Ranger Aircraft Engine Corporation purchased the property in 1927 and constructed manufacturing and test facilities for aircraft engines. Republic Aviation Corporation purchased the property in 1955 and used the existing facilities for research and development and office space. The Farmingdale Company owned the property from 1965 to 1972. Fairchild Industries purchased the property in 1972 and used it as warehouse and office space until closing in 1987. This parcel was removed from the original listing of the Main Plant Inactive Hazardous Waste Disposal Site after previous facility investigations showed no contamination was present. - no contamination on upper part - above Conklin.

Closure

The Fairchild Republic Main Plant closure plan was submitted to the NYSDEC in 1987 under the Resource Conservation and Recovery Act (RCRA) requirements. The approved plan was implemented from 1987 through 1988. The site closure included the removal of hazardous materials, residues, and all above and underground storage tanks, except four 15,000 gallon fuel oil tanks, which were removed in 1992.

Source

Fairchild Republic Main Plant manufacturing operations did not change significantly from the mid-1940s to 1987. Building 17 (demolished in 1997) was the primary manufacturing area with processes including chemical milling, alodining, anodizing, vapor degreasing, titanium descaling, and cadmium plating. Process chemicals used in this area included nitric acid, chromic acid, sulfuric acid, sodium hydroxide, toluene, tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), and nitric/hydrofluoric acid solutions. PCE, TCE, and 1,1,1-TCA were also used in other areas of the Main Plant.

Source

PCE was substituted for toluene as a coatings vehicle to conform with air pollution regulations beginning in 1975. Years later, the piping from the PCE tank was found to be leaking, creating a source of PCE soil and groundwater contamination. The TCE soil and groundwater contamination came from the vapor degreaser operations, from TCE that occurs in non-reagent grade PCE, and as a breakdown product of PCE.

The Main Plant industrial water supply was always obtained from groundwater wells. The average pumping rate listed in the RI Report was estimated at 1.7 million gallons per day. Non-contact industrial and air conditioning cooling water, treated wastewater, and stormwater were discharged through the storm sewer to the Old Recharge Basin located west of the site beginning in the early 1940s.

old  
source

The Old Recharge Basin, located west of Route 110, historically introduced low level volatile organic compound (VOC) contamination to the

low  
level  
VOC  
contam.

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6/  
RD '96

groundwater beneath Republic Airport. This low level groundwater plume has commingled with higher concentration contamination from an unknown upgradient VOC source. The Remedial Investigation for the Old Recharge Basin (ORB) showed that the ORB is no longer a source of groundwater contamination. A Record of Decision was signed for the ORB in June 1996 and included institutional controls (deed restriction, fencing, warning signs, and maintenance) to prevent contact with contaminated soils, surface water, and sediments on-site.

LIST  
←

Fairchild Republic constructed a wastewater treatment plant at the Main Plant in 1950 to reduce hexavalent chromium to trivalent chromium and to precipitate metal hydroxides in wastewater from the chemical milling, alodine process, anodizing, spotweld wash, and paint shop operations. The plant was located adjacent to the south wall of Building 17. Wastewater was treated in batches from 1950 to 1963. The treatment plant was upgraded in 1963 to handle continuous waste streams and again in 1986 to meet publicly owned treatment works pretreatment standards. The treatment plant effluent was diverted to the NYSDOT sewage treatment plant located on the Republic Airport property in 1981. In 1986, the treatment plant was connected to the Suffolk County Publicly Owned Treatment Works. Shortly thereafter in 1987 Fairchild Republic ceased manufacturing operations at the Main Plant.

? not  
a  
Source  
→

Fairchild connected several homes that had private wells to public water that were identified within an area between Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway. All private wells identified in this area of concern that are being used as a source of drinking water have been offered the opportunity to connect to the Suffolk County Water Authority (SCWA) public water supply at no cost to the homeowner by the 1996 Record of Decision. Two of these homeowners have refused to be connected and their cases referred to the Suffolk County Health Department.

196 RD  
AUC  
→

Two abandoned 550 gallon underground storage tanks were discovered and removed during the excavation of site soils in February 1998. Both underground storage tanks were found within the boundaries of the inactive hazardous waste site. One of the recently discovered tanks was next to the vapor degreaser. Based on the analytical results from sludge samples, the leaking tank was used to store trichloroethene. The tank location was within the zone of influence of the soil vapor extraction system. The second 550 gallon tank also contained a sludge material. The analysis showed the contents to be waste paint.

**Previous Investigations**

Numerous site-wide investigations have been performed prior to and in conjunction with the RI/FS consent order. The following is a partial list of reports on file that detail the findings of those investigations:



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Report Title	Date
Phase 2 Hydrogeological Investigation and Report	1987
Supplemental Phase 2 Report	1990
Summary of Environmental Investigations Report	1992
Old Recharge Basin Remedial Investigation Report	1995
Main Plant Site Remedial Investigation Report	1997
Main Plant Site Additional Sampling Report	1997

The purpose of the Main Plant Site Remedial Investigation (RI) was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted in two phases. The first phase was conducted between August 1992 and January 1993 and the second phase between September 1993 and February 1994. A report entitled "Fairchild Industries, Inc. Main Plant Site Remedial Investigation Report" (May 1997) describes the field activities and findings of the RI in detail. Data from previous investigations and additional sampling efforts in 1996 and 1997 for Old Recharge Basin fill materials were also compiled in the Main Plant Site RI Report. The RI included the installation of monitoring wells and soil borings, chemical analysis of soil and groundwater samples, soil gas surveys for volatile organic compounds, characterization of groundwater hydrogeologic conditions and physical properties of site soils, and additional site sampling for soils to be used in filling the Old Recharge Basin.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water, and surface water SCGs identified for the Main Plant Site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and 10 NYCRR Part 5 of NYS Sanitary Code. NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 Soil Cleanup Guidelines for the Protection of Groundwater, background conditions, and risk-based remediation criteria were used as SCGs for soils.

As described in the RI Report, many soil, groundwater and soil gas samples were collected at the Site to characterize the nature and extent of contamination. These samples were analyzed for volatile and semi-volatile organic compounds, pesticides, polychlorinated biphenyls (PCBs) and inorganics (metals). Overall, chlorinated volatile organic compounds (VOCs), mainly trichloroethylene (TCE) and perchloroethylene (PCE) are the contaminants of concern for this site. Discrete areas of site soils also contained chromium above NYSDEC TAGM 4046 guidelines but below hazardous levels of concern as substantiated by the Toxicity Characteristic Leaching Procedure (TCLP).

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Soil and Soil Gas

The most significant manufacturing and process areas were located in Building 17. The alodine and chemical milling tanks, vapor degreaser, and PCE and TCA tanks were located along the southern wall. It is this area that comprises most of the currently listed 0.53 acre site. The soils beneath the slab and adjacent to Building 17 were found to be contaminated with VOCs; mainly TCE and PCE. The alodine and chemical milling areas under Building 17 and sulfuric anodizing area under Building 42 also contained levels of chromium above NYSDEC TAGM 4046 soil values.

SOURCE

The highest soil gas concentrations were found near the former PCE tank and near the vapor degreaser area beneath Building 17. These concentrations ranged from non-detect (ND) to 1,300 ppmv for TCE, ND to 23,000 ppmv for PCE, ND to 690 ppmv for dichloroethylene (DCE, cis & trans), ND to 61 ppmv for trichloroethane (TCA) and ND to 0.016 ppmv for vinyl chloride. Soil gas data was used to delineate hot spots in soil and to guide subsequent soil sampling efforts. Post-remediation soil sampling results (MPS Additional Sampling Report, October 1997) and monthly SVE monitoring data submitted by Fairchild indicate that the source zone has been cleaned up.

SOIL -  
CLEAN

Comparative soil sample results ranged from ND to 4.4 ppm for TCE, ND to 4 ppm for PCE, ND to 0.14 ppm for DCE, ND to 0.013 ppm for TCA and 2.6 to 791 ppm for chromium. Most detectable results for soils were below NYSDEC TAGM 4046 soil cleanup values of 0.7 ppm for TCE, 1.4 ppm for PCE, 0.4 ppm for DCE, 0.8 ppm for TCA and 50 ppm for chromium. The chromium contaminated soils did not fail TCLP and have been excavated and removed from the Site.

Groundwater

The direction of groundwater for both the shallow and deep zone is to the south-southeast. The RI determined that Building 17 was a significant source area for VOC groundwater contamination. There is an extensive PCE plume that is well defined emanating from the area of the former PCE tank there. This plume is moving south-southeast beneath the runways of Republic Airport. In the area of the Site, the glacial aquifer flow in the horizontal direction is about 1.5 feet/day.

No information exists on the duration of TCE use or discharges at the Site. The vapor degreaser is a source of contamination of TCE. However, the TCE plume is not as well defined as the PCE plume for the following reasons: (1) the former high volume groundwater production wells and the new recharge basins on the Site may have affected the offsite migration of the plume, especially in the glacial aquifer; and (2) off-site sources of TCE, including the Old Recharge Basin (ORB), may have impacted the western portion of the groundwater plume beneath Republic Airport. Although the downgradient extent of the VOC plume has never been fully established, recent data obtained during the pre-design



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investigation (Remedial Design Data, August 1999) indicates that it does not extend into residential areas south of Republic Airport.

Under former Building 17, there is no clay layer separating the glacial and Magothy aquifers. However, there is an unnamed clay layer separating the upper Magothy from the lower Magothy. Elevated levels of PCE have migrated downward through the glacial aquifer toward the top of this clay layer separating the upper and lower portions of the Magothy aquifer. The RI soil borings indicate this clay layer is continuous throughout the area of concern. Deep aquifer testing below this clay formation found no VOCs and indicated that this clay layer has restricted downward migration and enhanced lateral migration of contaminated groundwater flow.

not since?

A limited sampling of groundwater wells was conducted in February 1997. The data revealed that the shallow and deep VOC groundwater contamination beneath the Site had dropped significantly and moved downgradient. For example MW-19D, located just downgradient of the Building 17 source areas, decreased from 3,600 ppb PCE to 142 ppb of PCE.

Some benzene, toluene, ethylbenzene and xylene (BTEX) was found in upgradient MW-3 from an offsite spill that has since been remediated. The February 1997 sampling round that included MW-3, found BTEX reductions to just above SCGs. The groundwater analytical data was also reviewed for inorganic SCG exceedences; including chromium. The groundwater analytical results indicate that the Site is not a source of inorganic contamination to groundwater.

Historic low level VOC groundwater contamination from the ORB can also be found on the southwestern side of Republic Airport. The majority of this plume is TCE and has commingled with the plume of a much higher level of TCE from an unidentified upgradient source. It has been more than 15 years since Fairchild discharged into the recharge basin. More recent RI data shows the ORB is no longer a source of VOC groundwater contamination (ORB Remedial Investigation Report, September 1995).

Groundwater concentrations exceeded the standard for TCE in 68 out of 160 samples collected during the RI. The maximum TCE concentration was 1,659 ppb. For PCE, the standard was exceeded in 39 out of 160 samples and the maximum PCE concentration was 5,100 ppb. For vinyl chloride, the standard was exceeded in 26 out of 160 samples. The maximum vinyl chloride concentration was 200 ppb. These groundwater concentrations were found downgradient and represent a significant exceedence of SCGs in the glacial and Magothy aquifers. The NYS groundwater standard is 5 ppb for TCE, PCE and DCE and 2 ppb for vinyl chloride.

#### Indoor Air

Based on previous soil gas survey results (Main Plant Site RI Report, May 1997), the subsequent demolition of Building 17 and all other original Fairchild buildings, and the removal of contaminant source areas, there are currently no on-site indoor air problems. Although some



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vaporization of dissolved volatile contaminants in groundwater beneath off-site structures may be occurring, potential indoor air problems associated with such a mechanism is not seen as a significant health risk due to the depth at which contaminated groundwater occurs and the presence of an impermeable clay unit above the contamination.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

<b>"Contaminated" Media</b>	<b>Residents</b>	<b>Workers</b>	<b>Day-Care</b>	<b>Construction</b>	<b>Trespassers</b>	<b>Recreation</b>	<b>Food<sup>3</sup></b>
Groundwater	<u>no</u>	<u>no</u>	<u>no</u>	<u>no</u>			<u>no</u>
Air (indoors)	___	___	___				
Soil (surface, <2 ft)	___	___	___	___	___	___	___
Surface Water	___	___			___	___	___
Sediment	___	___			___	___	___
Soil (subsurface, >2 ft)				<u>no</u>			<u>no</u>
Air (outdoors)	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media - Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("\_\_\_"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- X If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- \_\_\_ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.
- \_\_\_ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

---

<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish)

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Rationale and Reference(s):

**Summary of Human Exposure Pathways**

The potential exposure pathway of concern at the Site is ingestion of contaminated groundwater. During the RI, volatile organic compounds were detected in on-site and off-site groundwater monitoring wells at concentrations significantly above drinking water standards. There are three public drinking water supply wellfields located downgradient from the Fairchild site. These include: the East Farmingdale Water District Route 109 Wellfield, and the Suffolk County Water Authority Albany Avenue and Tenety Avenue Wellfields. The Great Neck Road Wellfield is located side-gradient relative to the plume. Two additional Suffolk County Water Authority Wellfields, North Fifth Street and Lambert Avenue are much further downgradient and should not be effected by the Fairchild plume.

VOCs were detected in the shallow wells at the Albany Avenue Wellfield in 1977. The contaminated wells were taken out of service in early 1977 and remain off-line. Organic chemical contamination has never been detected in the three deep wells at Albany Avenue, or at the other downgradient wellfields.

At the request of the NYSDOH, a private well survey was conducted downgradient of the Site between Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway. Several private wells were identified during the survey, some of which were used as a drinking water source. The residents with homes supplied only by private drinking water wells identified during the survey were advised as appropriate on measures to reduce possible exposure to contaminants that may be in their drinking water. Many of these homes have since been connected to public water. Except for two homeowners who continue to refuse connection, all homes serviced by private drinking water wells located in and around Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway have been connected to public water at no cost to the homeowner. The two remaining homes have been referred to the Suffolk County Department of Health (SCDHS).

Exposure to site-related chemicals in the public water supply is unlikely since routine monitoring of the public drinking water supply wells has not detected contamination above MCLs. SCDHS recently notified the NYSDEC that the Great Neck Road Wellfield has started to show low levels of dichloroethylene, currently below MCLs, in the monthly sampling. Portable carbon adsorption units are currently in place. The NYSDEC, in implementing the Fairchild ROD, is reviewing the data to determine whether this contamination is attributable to Fairchild and is monitoring the situation to ensure that the Suffolk County Water Authority is providing water that is potable.

**Previous Interim Remedial Measures (IRMs)**

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed

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before completion of the RI/FS. ~~Fairchild Republic has elected to implement two IRMs at the Main Plant Site.~~ The first IRM consisted of two soil vapor extraction (SVE) systems in Building 17. One SVE system addressed the TCE associated with the vapor degreaser located in the southwest corner of Building 17. The second SVE system addressed the PCE associated with the PCE tank located adjacent to the southeast portion of Building 17. The SVE systems operated beneath the slab of Building 17 for more than one year. The SVE effluent prior to treatment approached non-detect after a period of pulsing the system. Test results of the soils were compared to NYSDEC TAGM 4046 guidance values. These results demonstrated that VOCs were effectively removed from the soils beneath Building 17. Both SVE systems were decommissioned in March 1997.

~~The second IRM consisted of excavating and removing chromium contaminated soils from the Site.~~ These soils were placed in the Old Recharge Basin with the restriction that they must be placed a minimum of 10 feet below ground surface and 5 feet above the water table. None of the chromium analytical results for these soils exceeded chromium concentrations that currently exist in the Old Recharge Basin. The completed soil vapor extraction system, the chromium soil IRM, and the RCRA closure have removed all source areas from the MPS soils.

*fully decommissioned in '97*

#### Remediation

~~In March 1998, the DEC issued a ROD for the Fairchild Republic Main Plant Site.~~ The ROD called for groundwater pump and treat with a public supply wellhead treatment contingency. The pump and treat system will be designed to intercept the 1,000 ppb total VOC plume south of the Main Plant Site. The primary elements of the selected remedy are as follows:

1. A predesign investigation to determine the geology of and the optimum location for the groundwater extraction wells. The predesign investigation and the long term monitoring program will also include the development of a groundwater model of the aquifer, plume tracking, plume tracking updates and plume modeling periodic updates.
2. A remedial design program to verify the components of the design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program.
3. Groundwater extraction to address contamination above 1,000 ppb of the total VOC plume to the south of the MPS.
4. Long-term monitoring of the extraction well system.
5. Installation and quarterly monitoring for VOCs of outpost monitoring wells installed for the East Farmingdale Water District and the Suffolk County Water Authority. If necessary, outpost monitoring will be added for the Suffolk County Water Authority North Fifth Street Well and/or the Lambert Avenue Well and/or the Great Neck Road Wells.

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6. A wellhead treatment contingency plan for the design, construction, operation and maintenance of wellhead treatment systems, if necessary.
7. The East Farmingdale Route 109 and SCWA Tenety and Albany Avenue Wellfields will be sampled on a monthly basis for total volatile organic compounds.
8. Connection of any private drinking water wells within and around an area between Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway.

In March 1999, the DEC executed a Remedial Design/Remedial Action (RD/RA) Consent Order for the design and construction of the remedial program at the Fairchild site. The design work plan was submitted for review in May 1999 and comments were forwarded to Fairchild. The revised design workplan was approved in September 1999. The conceptual model for the groundwater was submitted by Fairchild's consultant for review in January 2000. As of August 2001, the pre-design investigation is nearing completion and the design is at the 35% phase. The installation of a test well for pump and treat has been completed and the consultant has submitted a schedule for completing the pump test and the remedial design. The final design should be complete by October 2001 and construction should begin early in 2002.



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4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**<sup>4</sup> (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

\_\_\_\_\_ If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

\_\_\_\_\_ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

\_\_\_\_\_ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Can the “significant” exposures (identified in #4) be shown to be within acceptable limits?

\_\_\_\_\_ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

\_\_\_\_\_ If no (there are current exposures that can be reasonably expected to be “unacceptable”) - continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

\_\_\_\_\_ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<sup>4</sup> If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.



**Current Human Exposures Under Control**  
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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

  X   YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Fairchild Republic Co. facility located at East Farmingdale, NY under current and reasonably expected conditions. This determination will be re-evaluated when the State becomes aware of significant changes at the facility.

       NO - "Current Human Exposures" are NOT "Under Control."

       IN - More information is needed to make a determination.

Completed by \_\_\_\_\_ Date \_\_\_\_\_  
Eric Hausamann  
Environmental Engineer 2

Supervisor \_\_\_\_\_ Date \_\_\_\_\_  
James Harrington  
Bureau of Program Management  
Division of Environmental Remediation

Director \_\_\_\_\_ Date \_\_\_\_\_  
Paul J. Merges, Ph.D.  
Bureau of Radiation and Hazardous Site Management  
Division of Solid and Hazardous Materials

Locations where References may be found:

New York State Department of Environmental Conservation  
Region 1  
SUNY Campus Building 40  
Stony Brook, NY 11790

Contact telephone and e-mail numbers

Walter Parish  
(631) 444-0240  
wjparish@gw.dec.state.ny.us

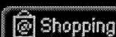
**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**





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11735, US

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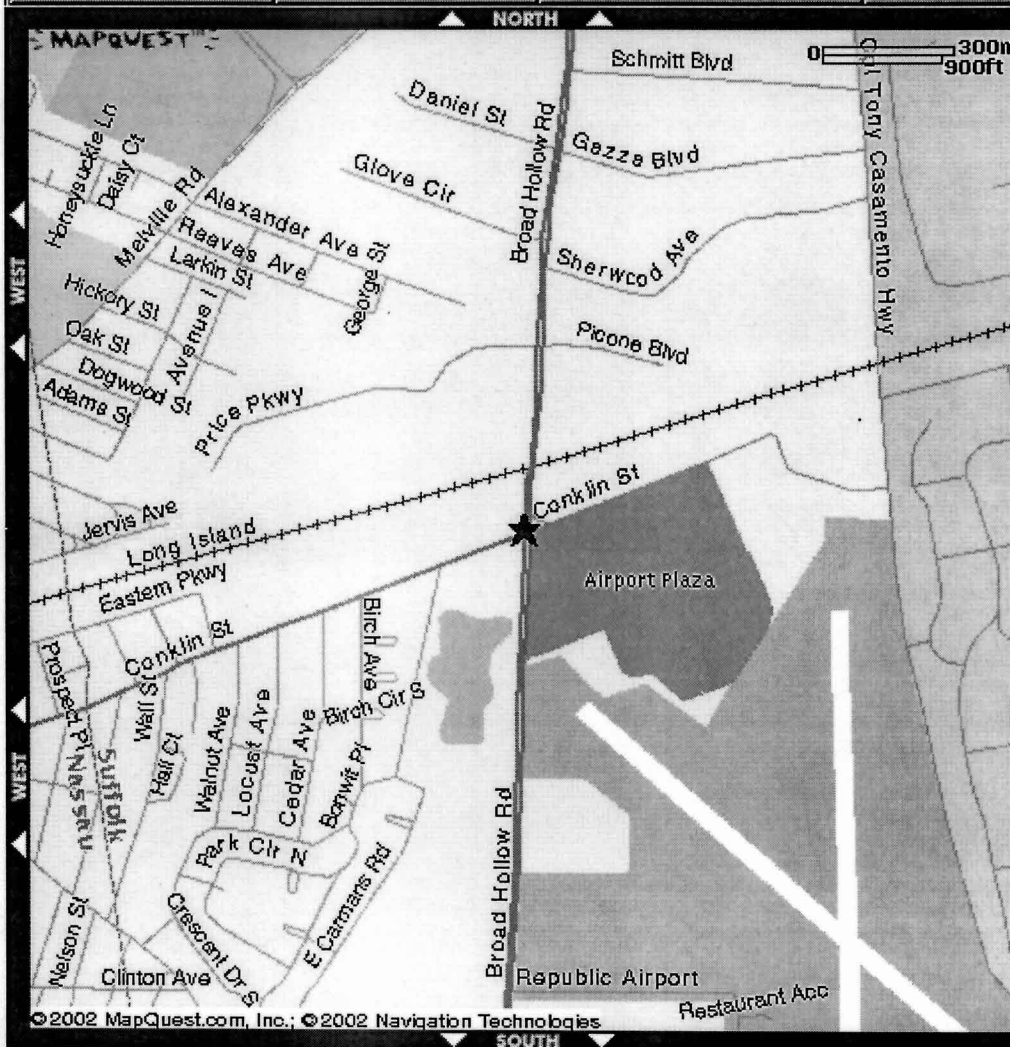
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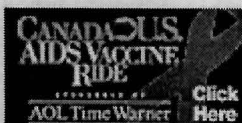
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# **RECORD OF DECISION**

## **FAIRCHILD REPUBLIC**

### **MAIN PLANT SITE**

**East Farmingdale, Suffolk County, New York**

**Site No. 1-52-130**

**March 1998**

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#### **SECTION 1: SITE LOCATION AND DESCRIPTION**

The Fairchild Republic Main Plant Site (see Figure 1) is comprised of 4.5 acres of a former facility of approximately 88 acres in East Farmingdale, Suffolk County, New York. The Main Plant Site is bounded by Route 110 (Broad Hollow Road) to the west; the Long Island Railroad (LIRR) to the north; New Highway to the east; and Republic Airport to the south. There are 4.5 acres in the southeast portion of the Fairchild property that represents the current boundary of the Fairchild Republic Main Plant Site (NYSDEC Inactive Hazardous Waste Disposal Site No. 1-52-130).

#### **SECTION 2: SITE HISTORY**

##### **2.1: Operational/Disposal History**

Fairchild Republic manufactured aircraft and related parts from 1931 to 1987. The total Fairchild Main Plant property in East Farmingdale (88 acres) consists of two parcels (see Figure 1). Parcel one is located south of Conklin Street and contains the 4.5 acre NYSDEC listed site. This parcel was first used as a runway in 1927. Seversky Aircraft operated at the site from 1931 to 1939. Republic Aviation Corporation purchased Seversky Aircraft in 1939. Numerous manufacturing buildings were built or expanded in the 1940's. Fairchild Industries, Inc. took possession of the property in 1965 when it acquired assets of Republic Aviation Corporation.

Parcel two (approximately 13 acres) is north of Conklin Street and Buildings 53, 54, and 55 were located here. The Ranger Aircraft Engine Corporation purchased the property in 1927 and constructed manufacturing and test facilities for aircraft engines. Republic Aviation Corporation purchased the property in 1955 and used the existing facilities for research and development and office space. The Farmingdale Company owned the property from 1965 to 1972. Fairchild Industries purchased the property in 1972 and used it as warehouse and office space until closing in 1987. Parcel two has been removed from the original listing of the Main Plant Inactive Hazardous Waste Disposal Site.

The Fairchild Republic Main Plant closure plan was submitted to the NYSDEC in 1987 under the Resource Conservation and Recovery Act (RCRA) requirements. The approved plan was implemented from 1987 through 1988. The site closure included the removal of hazardous materials, residues, and all above and underground storage tanks, except four 15,000 gallon fuel oil tanks, which were removed in 1992.

Fairchild Republic Main Plant manufacturing operations did not change significantly from the mid-1940s to 1987. Building 17 was the primary manufacturing area with processes including chemical milling, alodining, anodizing, vapor degreasing, titanium descaling, and cadmium plating. Process chemicals used in this area included nitric acid, chromic acid, sulfuric acid, sodium hydroxide, toluene, tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), and nitric/hydrofluoric acid solutions. PCE, TCE, and 1,1,1-TCA were also used in other areas of the Main Plant.

PCE was substituted for toluene as a coatings vehicle to conform with air pollution regulations beginning in 1975. Years later, the piping from the PCE tank was found to be leaking, creating a source of PCE soil and groundwater contamination. The TCE soil and groundwater contamination came from the vapor degreaser operations, from TCE that occurs in non-reagent grade PCE, and as a breakdown product of PCE.

The Main Plant industrial water supply was always obtained from groundwater wells. The average pumping rate listed in the RI Report was estimated at 1.7 million gallons per day. Non-contact industrial and air conditioning cooling water, treated wastewater, and stormwater were discharged through the storm sewer to the Old Recharge Basin located west of the site beginning in the early 1940s (See Figure 1.)

The Old Recharge Basin historically introduced low level volatile organic compound (VOC) contamination to the groundwater beneath Republic Airport. This low level groundwater plume has commingled with higher concentration contamination from an unknown upgradient VOC source. The Remedial Investigation for the Old Recharge Basin (ORB) has shown that the ORB is no longer a source of groundwater contamination. A Record of Decision was signed for the ORB in June 1996.

Fairchild Republic constructed a wastewater treatment plant at the Main Plant Site (MPS) in 1950 to reduce hexavalent chromium to trivalent chromium and to precipitate metal hydroxides in wastewater from the chemical milling, alodine process, anodizing, spotweld wash, and paint shop operations. The plant was located adjacent to the south wall of Building 17. Wastewater was treated in batches from 1950 to 1963. The treatment plant was upgraded in 1963 to handle continuous waste streams and again in 1986 to meet publicly owned treatment works pretreatment standards. The MPS treatment plant effluent was diverted to the NYSDOT sewage treatment plant located on the Republic Airport property in 1981. In 1986, the MPS treatment plant was



connected to the Suffolk County Publicly Owned Treatment Works. Shortly thereafter in 1987 Fairchild Republic ceased manufacturing operations at the Main Plant.

Fairchild connected homes with private wells to public water that were identified within an area between Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway. Fairchild agreed to do this work, but by doing so, Fairchild was not confirming that the contamination in these wells was from Fairchild nor were these connections made in response to any water quality problems necessarily attributable to Fairchild. Any private wells identified in this area of concern that are being used as a source of drinking water will be offered the opportunity to connect, at no cost to the homeowner, to the Suffolk County Water Authority (SCWA) public water supply by the Record of Decision.

Two abandoned 550 gallon underground storage tanks were discovered and removed during the excavation of site soils in February 1998. Both underground storage tanks were found within the boundaries of the inactive hazardous waste site. One of the recently discovered tanks was next to the vapor degreaser. Based on the analytical results from sludge samples, the leaking tank was used to store trichloroethene. The tank location was within the zone of influence of the soil vapor extraction system described in Section 3.2. The second 550 gallon tank also contained a sludge material. The analysis showed the contents to be waste paint.

## **2.2: Remedial History**

1987-8: Phase 2 Hydrogeological Investigation and Report by Geraghty and Miller, Inc.

1988: MPS Resource Conservation and Recovery Act work plan and closure by Eder Associates; including removal of 95 above and below ground tanks, hazardous materials and residues.

1989: The MPS listed as a Class 2 inactive hazardous waste disposal site due to past disposal practices.

1990: Supplemental Phase 2 Report, Geraghty and Miller, Inc.

1991: Fairchild/Grumman Wind Tunnel Investigation and catch basin removal.

1992: Summary of Environmental Investigations Report, Geraghty and Miller, Inc.

1992: MPS RI/FS Consent Order signed.

1992: Initiate Remedial Investigation fieldwork.

1992: Building 42 soil resampled.

1993: 13 fuel oil tanks removed.

1994: Petition for and acceptance of reduction of MPS Site boundary.

1994: Building 18, 18A, 20, 25, 27, 29, 30, 30A, 38, 39, 42, 43, 44, 45, 46, 63 and 64 demolition.

1995-6: Design and installation of Building 17 Soil Vapor Extraction IRM.

1996-7: Connection of downgradient private wells within a specified area to municipal water supply.

1996-7: Area 5 Inactive Hazardous Waste Area Soil Sampling.

1996-7: Building 17, 19, 19A, 32, 33, 53 and 55 demolition.

1997: Final Main Plant Site Remedial Investigation/Feasibility Study (RI/FS) Reports.

### **SECTION 3: CURRENT STATUS**

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and/or the environment, Fairchild Republic has recently completed the Remedial Investigation/Feasibility Study (RI/FS) for the Main Plant Site. The RI/FS documents can be found in the document repositories listed in Section 8.

#### **3.1: Summary of the Remedial Investigation**

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted in 2 phases. The first phase was conducted between August 1992 and January 1993 and the second phase between September 1993 and February 1994. A report entitled Fairchild Industries, Inc. Main Plant Site Remedial Investigation Report, May 1997 describes the field activities and findings of the RI in detail. Data from previous investigations and additional sampling efforts in 1996 and 1997 for Old Recharge Basin fill materials were also compiled in the Main Plant Site RI Report. The RI included the following activities:

- *Installation of monitoring wells and soil borings.*
- *Chemical analysis of soil and groundwater samples.*
- *Soil gas surveys for volatile organic compounds.*
- *Groundwater hydrogeologic conditions and physical properties of site soils.*
- *Compiling all previous data generated by the Site closure and investigations.*
- *Additional site sampling for soils to be used in filling the Old Recharge Basin.*

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water, and surface water SCGs identified for the Main Plant Site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and 10 NYCRR Part 5 of NYS Sanitary Code. NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 Soil Cleanup Guidelines for the Protection of Groundwater, background conditions, and risk-based remediation criteria were used as SCGs for soils.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

Chemical concentrations are reported in parts per billion (ppb), parts per million (ppm), and parts per billion by volume (ppbv) for air samples. For comparison purposes, SCGs are given for each medium. (See Table 1.)

### **3.1.1: Nature of Contamination**

As described in the RI Report, many soil, groundwater and soil gas samples were collected at the Site to characterize the nature and extent of contamination. These samples were analyzed for volatile and semi-volatile organic compounds, pesticides, polychlorinated biphenyls (PCBs) and inorganics (metals). Overall, chlorinated volatile organic compounds (VOCs), mainly trichloroethylene (TCE) and perchloroethylene (PCE) are the contaminants of concern for this site. Discrete areas of site soils also contained chromium above NYSDEC TAGM 4046 guidelines but below hazardous levels of concern as substantiated by the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP test is used to define a hazardous waste for disposal purposes.

### **3.1.2: Extent of Contamination**

Table 1 summarizes the extent of contamination for the contaminants of concern in the soils and groundwater and compares the data with the proposed remedial action levels (SCGs) for the Site. Some chemical concentrations no longer exist due to previously implemented interim remedial measures (IRMs). See Section 3.2. The following are the media which were investigated and a summary of the findings of the investigation:

#### **Soil**

The most significant manufacturing and process areas were located in Building 17 (see Figure 1). The alodine and chemical milling tanks, vapor degreaser, and PCE and TCA tanks were located along the southern wall. It is this area that comprises most of the currently listed 4.5 acre site. The soils beneath the slab and adjacent to Building 17 were found to be contaminated with VOCs; mainly TCE and PCE. The alodine and chemical milling areas under Building 17 and sulfuric anodizing area under Building 42 also contain levels of chromium above NYSDEC TAGM 4046 soil values.

The highest soil gas concentrations were found near the former PCE tank and near the vapor degreaser area beneath Building 17. These concentrations ranged from non-detect (ND) to 1,300 ppmv for TCE, ND to 23,000 ppmv for PCE, ND to 690 ppmv for dichloroethylene (DCE, cis & trans), ND to 61 ppmv for trichloroethane (TCA) and ND to 0.016 ppmv for vinyl chloride. There are no standards or guidance values for soil gas concentrations.

Comparative soil sample results ranged from ND to 4.4 ppm for TCE, ND to 4 ppm for PCE, ND to 0.14 ppm for DCE, ND to 0.013 ppm for TCA and 2.6 to 791 ppm for chromium. Most detectable results for soils were below NYSDEC TAGM 4046 soil cleanup values of 0.7 ppm for TCE, 1.4 ppm for PCE, 0.4 ppm for DCE, 0.8 ppm for TCA and 50 ppm for chromium. The chromium contaminated soils did not fail TCLP and were excavated and removed from the Site.

### Groundwater

The direction of groundwater for both the shallow and deep zone is illustrated in Figure 2. The RI determined that Building 17 is a significant source area for VOC groundwater contamination. There is an extensive PCE plume that is well defined emanating from the area of the former PCE tank. This plume is moving south-southeast beneath the runways of Republic Airport as shown on Figure 3. In the area of the MPS Site, the glacial aquifer flow in the horizontal direction is about 1.5 feet/day.

No information exists on the duration of TCE use or discharges at the MPS. The vapor degreaser is a source of contamination of TCE (see Figure 4). However, the TCE plume is not as well defined as the PCE plume for the following reasons: (1) the former high volume MPS groundwater production wells and the new recharge basins on the MPS Site (see Figure 2) may have affected the offsite migration of the plume, especially in the glacial aquifer; and (2) off-site sources of TCE, including the Old Recharge Basin (ORB), may have impacted the western portion of the groundwater plume beneath Republic Airport. Furthermore, the downgradient extent of the MPS VOC plume has never been fully established. However, it does extend south of Republic Airport.

Under Building 17, there is no clay layer separating the glacial and Magothy aquifers. However, there is an unnamed clay layer separating the upper Magothy from the lower Magothy. Elevated levels of PCE have migrated downward through the glacial aquifer toward the top of a clay layer confining unit separating the upper and lower portions of the Magothy aquifer. The RI soil borings indicate this clay layer is continuous throughout the area of concern as shown on Figure 5. Deep aquifer testing below this clay formation found no VOCs and indicated that this clay layer has restricted downward migration and enhanced lateral migration of contaminated groundwater flow.

A limited sampling of MPS groundwater wells was conducted in February 1997. The data revealed that the shallow and deep VOC groundwater contamination beneath the Main Plant Site had dropped significantly and moved downgradient. For example MW-19D, located just downgradient of the Building 17 source areas, decreased from 3,600 ppb PCE to 142 ppb of PCE.

Some benzene, toluene, ethylbenzene and xylene (BTEX) was found in upgradient MW-3 from an offsite spill that has since been remediated. The February 1997 sampling round that included MW-3, found BTEX reductions to just above SCGs. The groundwater analytical data was also



reviewed for inorganic SCG exceedences; including chromium. The groundwater analytical results indicate that the MPS is not a source of inorganic contamination to groundwater.

Historic low level VOC groundwater contamination slightly above SCGs from the ORB can also be found on the southwestern side of Republic Airport. The majority of this plume is TCE and has commingled with the plume of a much higher level of TCE from an unidentified upgradient source. It has been more than 15 years since Fairchild discharged into the recharge basin. More recent MPS RI data shows the ORB is no longer a source of VOC groundwater contamination.

Groundwater concentrations exceeded the standard for TCE in 68 of the 160 samples taken. The maximum RI TCE concentration was 1,659 ppb. For PCE the standard was exceeded in 39 of 160 samples taken. The maximum RI PCE concentration was 5,100 ppb. For vinyl chloride, the standard was exceeded in 26 of 160 samples. The maximum RI vinyl chloride concentration was 200 ppb. These groundwater concentrations were found downgradient of the MPS and represent a significant exceedence of SCGs in the glacial and Magothy aquifers. The NYS groundwater standard is 5 ppb for TCE, PCE and DCE and 2 ppb for vinyl chloride. (See Table 1.)

### **3.2: Interim Remedial Measures**

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. Fairchild Republic has elected to implement two IRMs at the Main Plant Site. The first IRM consisted of two soil vapor extraction (SVE) systems in Building 17 of the MPS Site. The second IRM removed the chromium contaminated soils from the surface of the Main Plant Site.

One SVE system addressed the TCE associated with the vapor degreaser located in the southwest corner of Building 17. The second SVE system addressed the PCE associated with the PCE tank located adjacent to the southeast portion of Building 17. The SVE systems operated beneath the slab of Building 17 for more than one year. The SVE effluent prior to treatment approached non-detect after a period of turning on and turning off (pulsing) the system. Test results of the soils were compared to NYSDEC TAGM 4046 guidance values. These results demonstrated that VOCs were effectively removed from the soils beneath Building 17. Both SVE systems were decommissioned in March 1997.

The second IRM consisted of excavating and removing chromium contaminated soils from the Site. These soils were placed in the Old Recharge Basin with the restriction that they must be placed a minimum of 10 feet below ground surface and 5 feet above the water table. None of the chromium analytical results for these soils exceeded chromium concentrations that currently exist in the Old Recharge Basin. The completed soil vapor extraction system, the chromium soil IRM, and the RCRA closure have removed all source areas from the MPS soils.

### **3.3: Summary of Human Exposure Pathways**

This section discusses the potential pathways of exposure for people living near the Fairchild Republic Site. An exposure pathway is how an individual may come in contact with a contaminant. The elements of an exposure pathway include; the source of contamination; the contaminated environmental media (i.e. soil, water and air) and the way the contaminant migrates from the source; the location where one may be exposed to the contamination; how the contaminant enters the body (i.e. inhalation, ingestion, and/or adsorption through the skin); and, the population exposed to the contamination.

The potential exposure pathway of concern at the MPS is ingestion of contaminated groundwater. During the RI, volatile organic compounds were detected in on-site and off-site groundwater monitoring wells at concentrations significantly above drinking water standards. There are three public drinking water supply wellfields located downgradient from the MPS. These include: the East Farmingdale Water District Route 109 Wellfield, and the Suffolk County Water Authority Albany Avenue and Tenety Avenue Wellfields. Two additional Suffolk County Water Authority Wellfields, North Fifth Street and Lambert Avenue are much further downgradient and should not be effected by the MPS plume. Public supply well locations are shown on Figure 6.

VOCs were detected in the shallow wells at the Albany Avenue Wellfield in 1977. The contaminated wells were taken out of service in early 1977 and remain off-line. Organic chemical contamination has never been detected in the three deep wells at Albany Avenue, or at the other downgradient wellfields.

At the request of the NYSDOH, a private well survey was conducted downgradient of the MPS between Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway. Several private wells were identified during the survey, some of which were used as a drinking water source. The residents with homes supplied only by private drinking water wells identified during the survey were advised as appropriate on measures to reduce possible exposure to contaminants that may be in their drinking water. Many of these homes have since been connected to public water. In the future, all homes serviced by private drinking water wells located in and around Route 110 and Great Neck Road, Wellwood Avenue and Sunrise Highway will be connected to public water, if permitted by the homeowner, at no cost to the homeowner. Currently, exposure to site-related chemicals in the public water supply is unlikely since routine monitoring of the public drinking water supply wells has not detected contamination.

In order to evaluate the health risks associated with exposure to contaminated drinking water, Fairchild Republic prepared a Risk Assessment using a groundwater model to predict what the concentration of VOCs would be if contaminants migrated to downgradient public drinking water supply wells. Groundwater models, such as the one used by Fairchild, which attempt to predict contaminant levels after microbial decomposition and transport through a heterogenous media (soil), can be highly speculative and may significantly underestimate the health risks associated

with exposure to contaminated drinking water. Therefore, NYSDOH requested that Fairchild recalculate the health risks associated with exposure to contaminated drinking water using the actual VOC levels detected in groundwater during the RI. However, in order to proceed with the RI/FS process, the NYSDOH and NYSDEC allowed Fairchild to forego recalculation of the Risk Assessment as requested, provided that Fairchild agree to a remedial action objective for the groundwater contamination that will be protective of human health and the environment.

### **3.4: Summary of Environmental Exposure Pathways**

This section summarizes the types of environmental exposures which may be presented by the Site. No impacts from the Main Plant Site to fish and wildlife resources were found.

No potential environmental exposure to natural habitats were found to exist based on the MPS data and no future impacts to surface water or fish and wildlife resources are expected. No wetlands or surface water bodies have been identified on or within a one-half mile downgradient radius of the Site. Surrounding land use is light industrial in all directions with the closest residential area over one-half mile to the west.

## **SECTION 4: ENFORCEMENT STATUS**

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Potentially Responsible Party (PRP) for this Site is Mairoll, Inc., which is a subsidiary of the Fairchild Holding Corporation. Fairchild implemented the RI/FS at the Site, as requested by the NYSDEC. After the remedy is selected, Fairchild will be requested to implement the remedial program. If an agreement cannot be reached with Fairchild, the NYSDEC will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs incurred by the State.

The following is the chronological enforcement history of this site:

### Plans

1987-8 RCRA Closure Plan

### Orders on Consent

<u>Date</u>	<u>Index No.</u>
03/20/92	No. W1-0461-90-02-MPS RI/FS Order
12/25/96	No. W1-0705-94-08-ORB Fill Order

## Fairchild Republic Main Plant Site

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EPA ID Number: NYD079818555

### Other (Former) Names of Site

None

### Site Description

The former Fairchild Republic Company facility is located in East Farmingdale, Long Island. This facility manufactured aircraft and related parts from 1931-1987, and includes two New York State Department of Environmental Conservation (NYSDEC)-listed sites: the main plant site (MPS) and the old recharge basin (ORB). The MPS is bounded by Route 110 (Broad Hollow Road) to the west; the Long Island Railroad (LIRR) to the north; New Highway to the east, and Republic Airport to the south. The ORB Site is located on the opposite side of Route 110, south of Conklin Street. The ORB was used by Fairchild to discharge process waste waters and storm water. All of the former site buildings have been razed and the clean materials and site soils were used to fill in the ORB. A shopping mall is now located on the former MPS area. The nearest down-gradient residences are about a mile away, and the closest down-gradient public water supply wellfield is about 1.5 miles southeast.

### Site Responsibility and Legal Instrument

Order on Consent (#W1-0461-90) signed in March 1992 between NYSDEC and Fairchild Republic Company.

### Permit Status

The facility has Resource Conservation and Recovery Act (RCRA) interim status pursuant to State of New York (6 NYCRR) Part 373 standards for owners and operators of hazardous waste facilities.

### Potential Threats and Contaminants

- **Soil**  
Soil contamination, primarily trichloroethylene (TCE) and perchloroethylene (PCE), was found under the PCE tank and the vapor degreaser, which were located in Building 17. There were also elevated levels of chromium in the soil underneath Buildings 17 and 42.
- **Groundwater**  
The groundwater has been contaminated by several sources. There are two upgradient sources, one of low-level mixed volatiles and one higher level TCE source. These are both contributing to the plume from Fairchild, which moves with the groundwater in a south-southeast direction. The old recharge basin



(ORB) is no longer characterized as a source but has historically contaminated groundwater with volatile organic solvents (VOCs), primarily trichloroethylene (TCE) and perchloroethylene (PCE.) This old contamination is currently still affecting the western portion of the plume. The main human health threat posed by this contamination is considered to be ingestion, and steps have been taken to eliminate this pathway (see discussion on groundwater remediation, below).

- **Indoor Air**

Although there are new structures built on the main plant site (MPS), the contamination at that location has both moved downgradient (per 1997 sampling) and has settled quite deeply into the upper glacial and Magothy aquifers. Ongoing soil gas sampling following the soil vapor extraction (SVE) interim remedial measure (IRM) showed the soil gas VOC levels to be below the State guidance values. The plume has not reached residences downgradient of the facility, so indoor air contamination is not a threat.

## **Cleanup Approach and Progress**

Under the tank closure program, ninety-five underground and above-ground storage tanks were removed. During the demolition of Building 17, three more previously undocumented underground storage tanks (USTs) were located and removed from the main plant site.

- **Soil**

All structures at the main plant site (MPS) have been razed, and the soil contamination has been removed through two interim remedial measures (IRMs) that were implemented in 1996. The first IRM consisted of two soil vapor extraction systems set up to clean volatile organic solvent (VOC) contamination under Building 17, and the other IRM was the excavation of chromium-contaminated soils under Buildings 17 and 42. Both of these IRMs have been completed and the sources removed. The chromium-contaminated soils, which did not qualify as hazardous waste, were properly disposed of in the old recharge basin (ORB).

- **Groundwater**

The ORB was taken out of use over 15 years ago and is no longer a source of contamination. The upgradient mixed volatiles source has been remediated, although the upgradient trichloroethylene (TCE) source has not yet been identified. Residents who use private wells as drinking water supply who are within the range of the plume have been advised to connect to the public water supply. Many residents have done this. The 1998 "statement of basis" issued by New York State Department of Environmental Conservation (NYSDEC) called for a groundwater pump-and-treat system to be installed. The construction of the pump-and-treat system is being finalized following several years of design, revision, and construction.

- **Indoor Air**

No indoor air threats are anticipated at this time.

## Fairchild Republic Main Plant Site

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EPA ID Number: NYD079818555

### Other (Former) Names of Site

None

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**Site Repository**

NYSDEC  
Division of Solid & Hazardous Materials  
625 Broadway, 8th Floor  
Albany, New York 12233-7252

*and*

NYSDEC  
Region 1 Office  
SUNY Campus, Loop Road, Building 40  
Stony Brook, NY 11790



